FIG. 1

10	PROBE
12	TRANSMITTING/RECEIVING SECTION
17	B IMAGE CONSTRUCTING SECTION
19	DOPPLER IMAGE CONSTRUCTING SECTION
21	CFM CONSTRUCTING SECTION
22	JUDGING SECTION
23	SYNTHESIZING SECTION
25	DISPLAY SECTION
30	OPERATION CONSOLE
26	CONTROL SECTION

FIG. 2

13	B IMAGE JUDGING UNIT
14	DOPPLER SIGNAL JUDGING UNIT
15	CFM JUDGING UNIT

FIG. 3

12	TRANSMITTING/RECEIVING SECTION
17	B IMAGE CONSTRUCTING SECTION
23	DATA EXTRACTING UNIT
26	CONTROL SECTION
32	IMAGE MEMORY
33	VARIANCE JUDGING UNIT

FIG. 4

TIME

FIG. 5

BRIGHTNESS

VARIATION IN BRIGHTNESS

FRAME

FIG. 6

START

101   DETECT THAT PROBE IS LEFT IN THE AIR

YES

NO

102   SET FREEZE TIME (T1)

103   DISPLAY WARNING ON MONITOR

104   INPUT COMMAND FROM OPERATION CONSOLE

YES

YES

YES

INITIALIZE TIMER

105   HAS REMAINING TIME OF STANDBY TIME (T2) REACHED ZERO?

106   FREEZE PROCESSING

107   INPUT COMMAND FROM OPERATION CONSOLE

YES

NO

108   RELEASE FREEZE

FIG. 7(A)

ULTRASONIC WAVE DIAGNOSIS TIME (T1)

LEFT-IN-THE-AIR DETECTION (Ta)

STANDBY TIME (T2)

START OF FREEZE (Tb)

FREEZE CONTINUANCE TIME (T3)

RESTORATION PROCESSING (Tc)

ULTRASONIC WAVE DIAGNOSIS TIME (T4)

FIG. 7(B)

ULTRASONIC WAVE DIAGNOSIS TIME (T1)

LEFT-IN-THE-AIR DETECTION (Ta)

STANDBY TIME (T2)

SETTING CHANGE (Td)

SAVE TIME (U3)

RESTORATION PROCESSING (Tc)

ULTRASONIC WAVE DIAGNOSIS TIME (T4)

FIG. 8

12   TRANSMITTING/RECEIVING SECTION

19   DOPPLER IMAGE CONSTRUCTING SECTION

26   CONTROL SECTION

34-1   IMAGE MEMORY

35   VARIANCE JUDGING UNIT

FIG. 9

VARIANCE

THRESHOLD

FRAME

FIG. 10

12   TRANSMITTING/RECEIVING SECTION

21   CFM CONSTRUCTING SECTION

26   CONTROL SECTION

36   IMAGE MEMORY

37   VARIANCE JUDGING UNIT

FIG. 11

US SCREEN

FREEZE WILL BEGIN IN "X" SECONDS.

DISPLAY WARNING IN JAPANESE OR FOREIGN LANGUAGE.   AUTOMATICALLY

REDUCE THE NUMERICAL VALUE OF "X".

FIG. 12

US SCREEN

IMAGE QUALITY WILL CHANGE IN "X" SECONDS.

CAUSE CHARACTERS TO BLINK, INCREASE SIZE, AND DISPLAY NEW SYMBOL

WHEN REMAINING TIME HAS BECOME SHORT.

ATTENTION

IMAGE QUALITY WILL CHANGE IN "X" SECONDS.

FIG. 13

12   TRANSMITTING/RECEIVING SECTION

26   CONTROL SECTION

72   IMAGE MEMORY

74   COMPARISON REFERENCE DATA MEMORY

76   JUDGING CIRCUIT

FIG. 14

START

200   LEFT-IN-THE-AIR MONITOR MODE INTERRUPTION

201   CHANGE TO INSPECTION MODE (M) SETTING

202   ACQUIRE FRAME IMAGE (F1)

203   READ FRAME IMAGE (F0)

199   ACQUIRE, IN ADVANCE, FRAME IMAGE (F0) IN INSPECTION MODE

(M) WHEN PROBE IS LEFT IN THE AIR

204   JUDGE SAMENESS OF F1 AND F0

MATCH

DIFFERENT

205   DISPLAY WARNING ON MONITOR (E.G., DISPLAY CHARACTER

STRING SUCH AS "FRAME RATE WILL BE LOWERED IN X SECONDS" ON

MONITOR)

INITIALIZE TIMER

104   INPUT COMMAND FROM OPERATION CONSOLE

INPUT FROM SPECIFIC KEY

YES

NO

105   COUNT OF TIMER = SET VALUE

MATCH

DIFFERENT

106-c LOWER FRAME RATE

107   INPUT COMMAND FROM OPERATION CONSOLE

YES

NO

108   RETURN FRAME RATE TO ORIGINAL STATUS

END

FIG. 15

START

300   ACQUIRE TEMPORALLY CONTINUOUS PLURAL IMAGES

301   DETECT TEMPORAL CHANGE IN BRIGHTNESS OF IMAGE FRAMES

THERE IS A CHANGE

THERE IS NO CHANGE

205   DISPLAY WARNING ON MONITOR (E.G., DISPLAY CHARACTER STRING SUCH AS "FRAME RATE WILL BE LOWERED IN X SECONDS" ON MONITOR)

INITIALIZE TIMER

104   INPUT COMMAND FROM OPERATION CONSOLE

44

INPUT FROM SPECIFIC KEY

YES

NO

105   COUNT OF TIMER = SET VALUE

MATCH

DIFFERENT

106-c LOWER FRAME RATE

302   ACQUIRE TEMPORALLY CONTINUOUS PLURAL IMAGES

303   DETECT CHANGE IN IMAGE OR INPUT FROM OPERATION CONSOLE

YES

NO

108   RETURN FRAME RATE TO ORIGINAL STATUS

END

FIG. 16

12   TRANSMITTING/RECEIVING SECTION

26   CONTROL SECTION

62   COMPUTATION PROCESSING CIRCUIT

63   FRAME MEMORY